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- (b) free of contaminating arsenite; and
 - (c) homogenous as to the heavy chain C-terminal amino acid residue.
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Please add new claims 30-37.

30. (New) A composition comprising $F(ab')_2$ produced by:

(A) expressing an immunoglobulin presequence comprising a first Fab' in a microbial host cell culture under conditions suitable for the secretion of said first Fab' to the periplasmic space of the host cell and formation of Fab'-SH, said first Fab' being capable of binding a first epitope;

(B) expressing an immunoglobulin presequence comprising a second Fab' in a microbial host cell culture under conditions suitable for the secretion of said second Fab' to the periplasmic space of the host cell and formation of Fab'-SH, said second Fab' being capable of binding a second epitope;

C2

(C) recovering said first and second Fab'-SH from said host cells; and

(D) forming a covalent bond between a free thiol cysteinyl residue of said first and second Fab'-SH to form bivalent $F(ab')_2$.

31. (New) The composition of claim 30, wherein step (D) comprises forming said covalent bond in vitro.

32. (New) The composition of claim 31, wherein step (D) comprises:

(a) reacting the first Fab'-SH with (i) 5,5'-dithiobis (2-nitrobenzoic acid) (DTNB) to form a thionitrobenzoate derivative Fab'-TNB or (ii) a bifunctional maleimide;

(b) directly coupling said first Fab'-TNB or maleimidated Fab' to the second Fab'-SH to form a $F(ab')_2$; and

(c) recovering said $F(ab')_2$.

33. (New) The composition of claim 30, wherein the $F(ab')_2$ is bispecific.
34. (New) The composition of claim 30, wherein the $F(ab')_2$ is monospecific.
35. (New) The composition of claim 30, wherein each Fab' of the $F(ab')_2$ has only one hinge region cysteine.
36. (New) The composition of claim 30 which is:
- (a) substantially free of $F(ab')_2$ having hinge region intrachain disulfide bonds;
 - (b) substantially free of contaminating arsenite; and
 - (c) substantially homogenous as to the heavy chain C-terminal amino acid residue.
37. (New) The composition of claim 30, wherein each Fab' comprises the C-terminal amino acid sequence Cys Ala Ala.
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